ecology and environment, inc.
108 SOUTH WASHINGTON, SUITE 302, SEATTLE, WASHINGTON 98104, TEL. 206-624-9537
International Specialists in the Environmental Sciences

YPLSF
1-4

M E M O R A N D U M

DATE: 7/8/82

SUBJ: Yakima Agricultural Research Laboratory, U.S.D.A.

TO: John Osborn

REF: TDD 10-8206-01

FROM: Jacqueline Betz JB

CC: Phil Wong

1.0 SUMMARY

The U.S. Department of Agriculture's Research Laboratory in Yakima, Washington, has been researching pesticides since 1961. Many unknown formulations of pesticides are analyzed and consequently disposed of in a septic tank that has a drainfield system.

Because the geology of the area is characterized by sands and gravels with high permeability, there is concern that pesticides may be leaching into the drinking water aquifer.

The Field Investigation Team (FIT) conducted a preliminary site investigation on June 24, 1982. The plant manager was (b)(6) and no one was knowledgeable about the history of pesticide disposal methods and no maps were available to indicate the exact location of the drainfield system at the time. An HNU photoionizer, placed in shallow holes south of the septic tank dug by the FIT detected volatile organics in the soil above the background level. These volatile compounds were thought to be from the petroleum carrier solution mixed with the pesticides.

2.0 PHYSICAL DESCRIPTION

2.1 LOCATION

The U.S. Department of Agriculture's Research Laboratory, 3706 West Nob Hill Blvd., Yakima, Washington 98902, is located within the city limits of Yakima in Section 27, Range 18 East, Township 13 North, Yakima West Quadrangle: Latitude 46°36'57", Longitude 120°33'37" (see Figure 1). The area is zoned for mixed use (commercial, residential, industrial).

2.2 CLIMATE AND WATER BUDGET

According to the Climatic Atlas of the United States (U.S. Department of Commerce, 1968) this area receives approximately 8 inches of total precipitation annually with a mean annual lake evaporation of 42 inches. Approximately 75 percent of the precipitation falls in the period October through March.

The area is characterized by a dry continental climate because it lies in the rain shadow of the Cascade Mountain Range. The hottest months are June-August with temperatures as high as 100°F. The coolest months are December-February with minimum temperatures in the 20's F.

2.3 GEOLOGY AND HYDROLOGY

Well logs indicate the immediate area is underlain by a sandy gravelly loam on top of a cemented sand and gravel referred to in some well logs as conglomerate. Soil permeability is high and slopes are low (<2%). Water yields in these gravels is relatively low but adequate for domestic needs. The major aquifer is in the Yakima basalt at depth (Foxworthy, 1962).

The water table is shallow (<20 feet), mainly because of extensive irrigation in the area during the summer, and also influx from creeks draining the mountains. Groundwater flow is to the southeast towards the Yakima River.

Well logs for domestic wells are not required by the County of Yakima, therefore, groundwater use in the vicinity cannot be quantifed. However, there are some well logs filed that indicate shallow wells downgradient are presently being used for private domestic purposes (see Well Logs, Attachment A). The primary use of groundwater in this area is for irrigation. Public water is supplied by the City of Yakima from the Naches River.

2.4 LAND USE AND SENSITIVE HABITATS

The area surrounding the site is within metropolitan Yakima. More than 10,000 people live within a mile of the site. According to the U.S. Fish and Wildlife Service (USFW) no known threatened or endangered species inhabit this area. It is not registered as a critical habitat by the USFW.

3.0 DISPOSAL PRACTICES

The research facility generated little waste from its beginning in 1961 through 1968 according to B. Brown, Administrative Officer. Wastes from 1961 through 1968 were disposed of on the ground. About 1968 the septic tank and drainfield system were installed to dispose of unused mixed pesticides from spray application equipment, wastes from a mixing formulation laboratory and rinse water from spray application equipment. A sink and toilet also drain into the 300 gallon septic tank.

The USDA estimates that about 250 gallons of mixed pesticides and about 5000 gallons of rinsate from the application equipment are injected into the septic tank each year.

4.0 PRELIMINARY SITE INVESTIGATION

On June 24, 1982, the FIT visited the site with Dennis Bowhay, Washington State Department of Ecology. An HNU photoionizer, used to check for organics in the soil, showed several readings above the background level in the area to the south of the septic tank (see attached maps of the facility). There was a slight chemical odor. The cement drain for the septic tank was in active use while the FIT was on site (see photographs, attached).

5.0 DISCUSSION

About 250 gallons of mixed pesticides and 5000 gallons of rinsate has been disposed of annually for the last 14 years at this site. It is assumed that some of these pesticides are toxic and persistent and pose a threat to human health and the environment. There is the possibility of offsite migration of pollutants into the unconfined aquifer, used downgradient for private domestic drinking water wells.

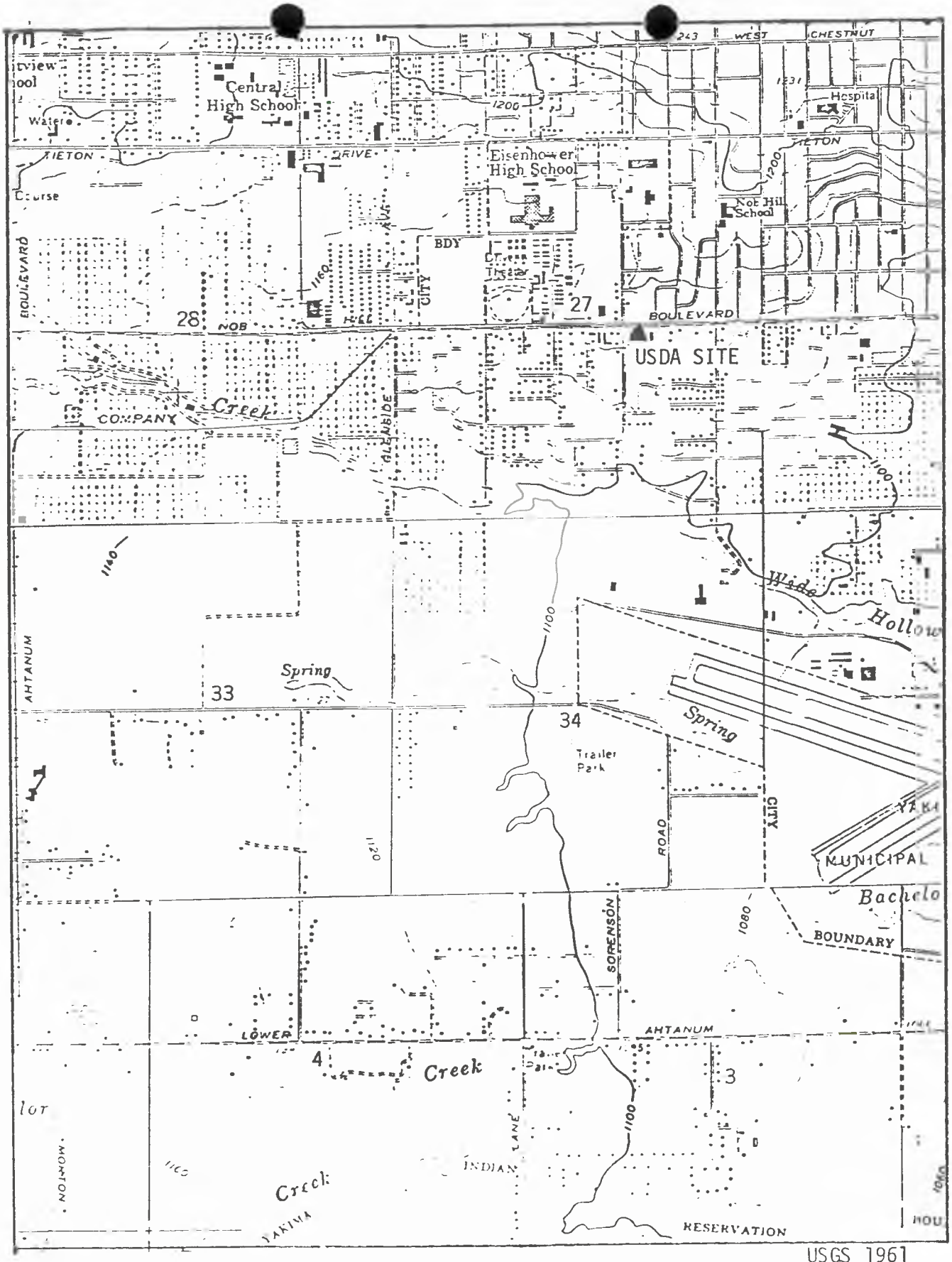
6.0 CONCLUSIONS AND RECOMMENDATIONS

Unknown formulations of mixed pesticides are likely to be leaching into the groundwater and migrating offsite. The FIT recommends that domestic wells in the area be sampled and analyzed for priority pollutants and pesticides. An upgradient domestic well could be used as a monitoring well and a minimum of two downgradient wells onsite should be installed to determine what migration may be taking place.

REFERENCES

Foxworthy, B.L., 1962, Geology and groundwater resources of the Ahtanum Valley, Yakima County, WA. U.S. Geological Survey, Water Supply Paper 1598.

U.S. Geological Survey (USGS), 1958, (photorev. 1974) Yakima West, WA.: National Topography Map Series, Scale 1:24,000.



Scale 1:24,000

USGS 1961

FIGURE 1

YAKIMA AGRICULTURAL RESEARCH LABORATORY, YAKIMA, WA

PHIL WONG

ecology and environment, inc.

108 SOUTH WASHINGTON, SUITE 302, SEATTLE, WASHINGTON 98104, TEL. 206-624-9537

International Specialists in the Environmental Sciences

DATE: August 31, 1982

TO: John Osborn

FROM: Hussein Aldis HA

SUBJ: U.S. Dept. of Agriculture Laboratory and Farm Machinery Corp. (FMC), Sites Yakima, Washington

REF: TDDs 10-8208-04 and 10-8208-07.

CC: Phillip Wong, Niel Thompson

In response to TDD 10-8208-07 (8/23/82) the author and Lazar Gorelik of the Field Investigation Team (FIT) left Seattle for Yakima on Monday, August 23, taking the EPA Minuteman drill with them.

On August 24 they met with Dennis Bowhay at the Dept. of Ecology and then went with him to the U.S.D.A. Laboratory and met with Dr. Eric Halfhill. A site was selected about 50 feet downslope from the pesticide disposal tank and a hole was drilled to 21 feet. The drill became stuck three times when it encountered gravel. Once the augers were freed by hammering and twice they had to be pulled with a fork lift provided by Dr. Halfhill. The drill engine also broke down and had to be repaired. Drilling was stopped after the drill had been unable to advance through what appeared to be cemented gravel and had jammed for the third time. (See attached well log.)

No groundwater was encountered at any time, so no samples were taken. Because of the unexpected depth to groundwater it was felt that only a very large back-hoe could have excavated a trench to groundwater. The disruption and probable damage to the numerous irrigation lines on the site made use of such equipment impractical and its expense did not seem to be warrented in any case. It is recommended that a drilling subcontract be let to put down several shallow wells on the site and that samples from nearby shallow domestic wells be taken when the monitoring wells are sampled. While chlorinated organic pesticides are the substances of major concern, Dr. Halfhill said that the site had been a pear orchard for many years and was probably contaminated with both lead and arsenic.

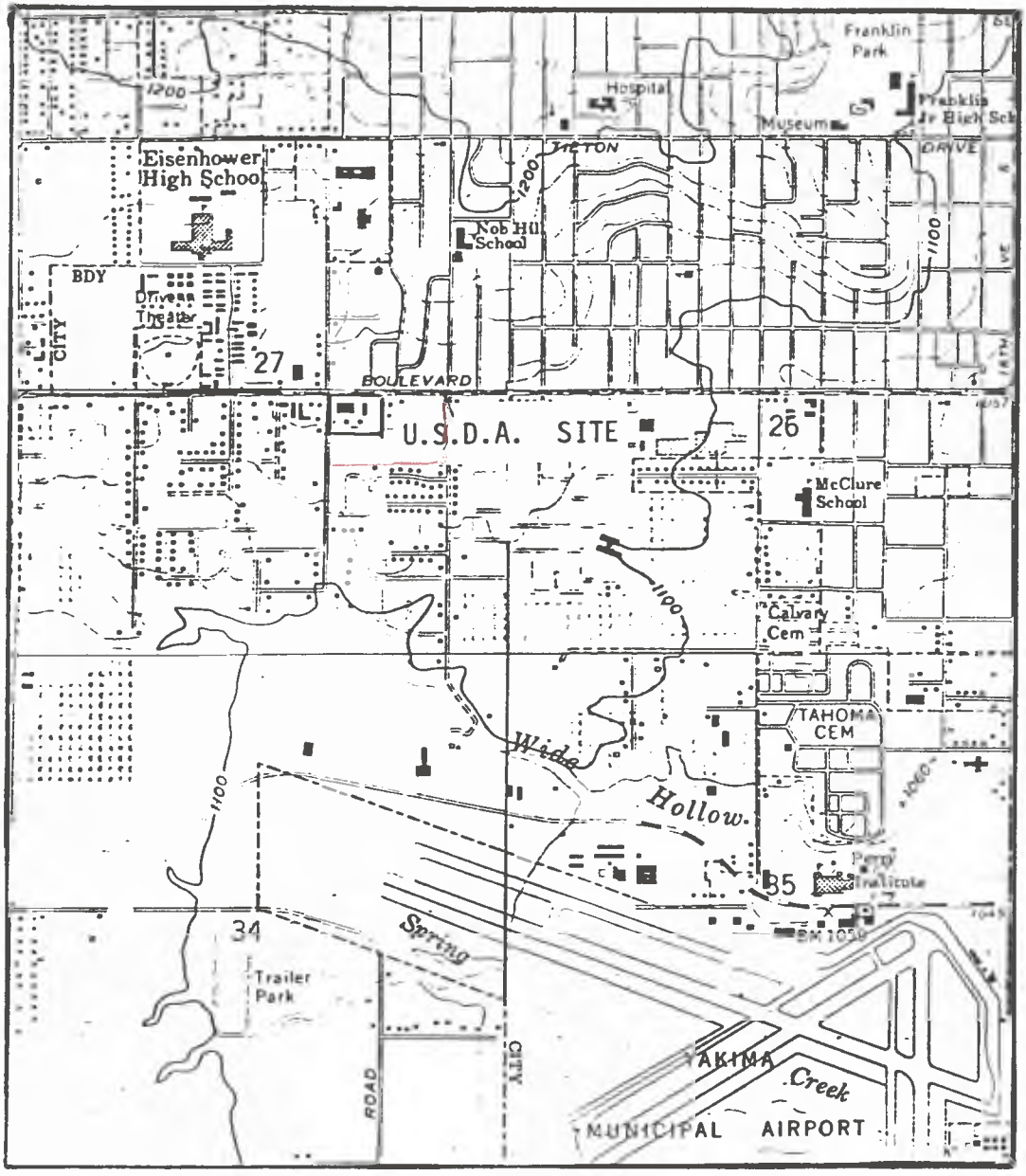
No work was attempted at the FMC site as the company has yet to grant permission for the FIT to drill at this site.

U.S. Geolgoical Survey (USGS), 1958, (photorev. 1974), Yakima West, WA: National Topography Map Series, Scale 1:24,000

U.S. Dept. of Agriculture Laboratory

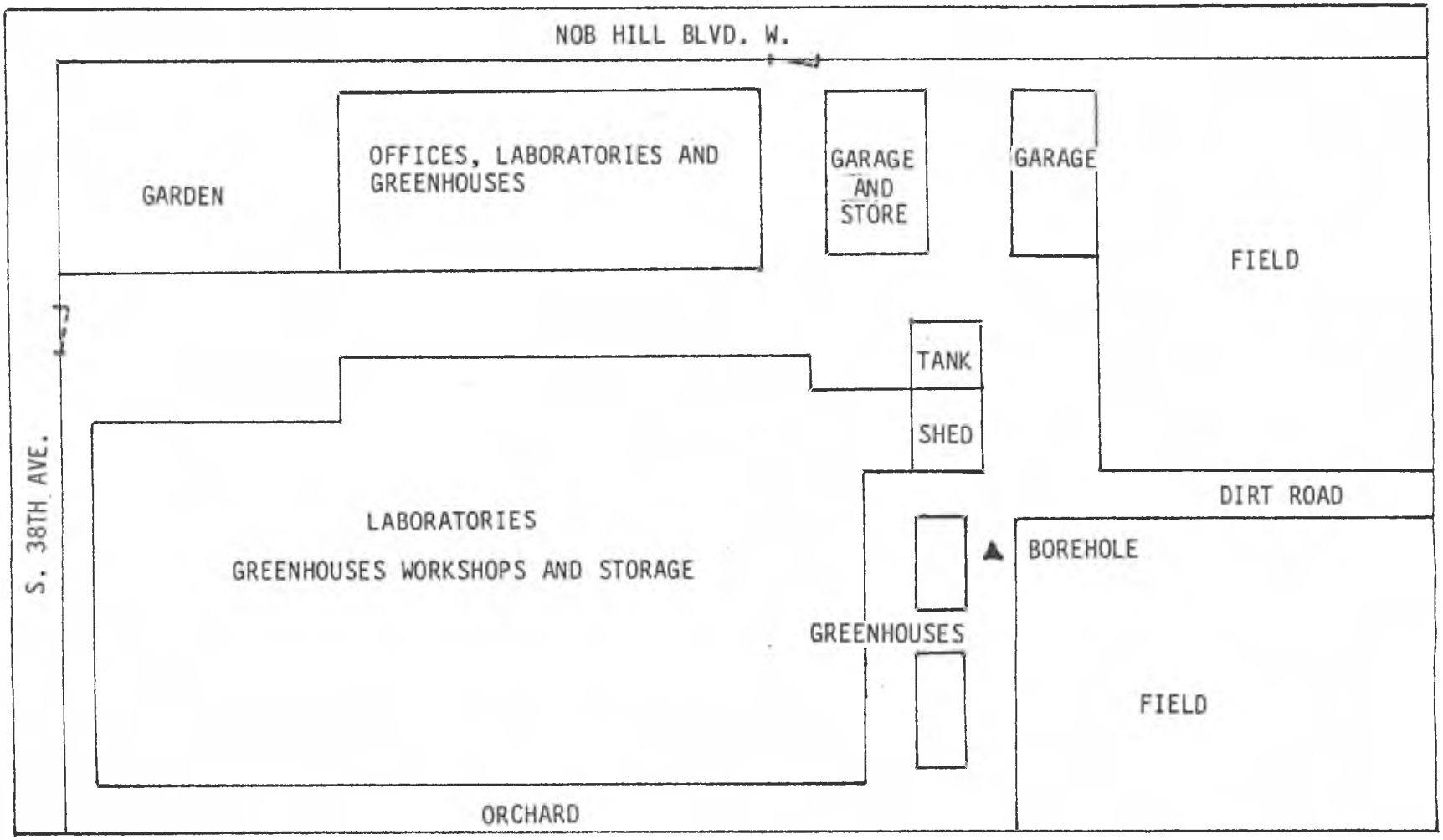
Well Log

Depth (in feet)	Materials Encountered
0-10	brown clayey silt loam.
10-16	brown silty clayey sand, fine to coarse with pebbles, increasing sand and gravel with depth.
16-17	brown damp silty clay.
17-20	brown silty clayey sand, coarse - medium with some basalt gravel.
20-21	hard, possibly cemented gravel, brown to black, sandy, fragments of basalt.
	Refusal at 21 feet.



Scale 1:24,000 USGS 1961

FIGURE 1
U.S. DEPARTMENT OF AGRICULTURE SITE
YAKIMA, WASHINGTON



Not To Scale

FIGURE 2
SITE PLAN
U.S.D.A. LABORATORY
YAKIMA, WASHINGTON

June 28, 1982 WONG

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: U.S. DEPARTMENT OF AGRICULTURE LABORATORY

LOCATION: 3706 WEST NOB HILL BLVD.
YAKIMA, WA 98902

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None

Rationale for attributing the contaminants to the facility:

None

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Sand and gravel water table aquifer

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

less than 20 feet average, about 8-15 feet.

Depth from the ground surface to the lowest point of waste disposal/ storage:

less than 10 feet

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

Oct/Mar ≅ 6.8" 3.6" of precip in Yakima falls as snow (36" of snow)

Mean annual lake or seasonal evaporation (list months for seasonal):
Oct/Mar evaporation low: Note average monthly traps and relative humidity.

Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
60°	≅45°	35-40°	25-30°	35°	50°	Temp.
65%	70%	85%	90%	80%	70%	Relative Humidity

Net precipitation (subtract the above figures):

Net infiltration probably 4-5" per year during winter months
(Bill Weller, SCS, Hydrologist, Spokane)

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Silt loam
(on site drill hole by FIT 8/24/82)

Permeability associated with soil type:

Moderate

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):
Liquids
(Dr. Eric Halfhill, USDA, Yakima)

* * *

3 CONTAINMENT

Containment None

Method(s) of waste or leachate containment evaluated:
Disposal to septic tank drain field

Method with highest score:
As above

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Chlorinated pesticides (DDT, etc.)

Compound with highest score:

DDT

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):
Minimum of 1-40 bbls of wash water and formulated pesticide mixtures

Basis of estimating and/or computing waste quantity:
Phone conversation Dr. Eric Halfhill USDA 7/30/82

* * *

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water	DOE files - water rights, public water supplies
Irrigation	DOE files - water rights

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

(b)(6) well Logan Ave. SW¼ of SE¼ sec. 27 T 13N R 18E W.M.
City of Yakima Airport well Sec. 35 75 ft. from site (DOE files)

Distance to above well or building:

About 2000 ft. for (b)(6) well

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

>50,000 (City of Yakima)
≅5000 (Nob Hill Water Co.)

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

<200 acres (DOE water rights)

Total population served by ground water within a 3-mile radius:

>50,000

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

None

Rationale for attributing the contaminants to the facility:

None

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

<3% (USGS Yakima West Quad. map)

Name/description of nearest downslope surface water:

Wide Hollow Creek

Average slope of terrain between facility and above-cited surface water body in percent:

<3%

Is the facility located either totally or partially in surface water?

No

Is the facility completely surrounded by areas of higher elevation?

No

1-Year 24-Hour Rainfall in Inches

0.9" 90% of 2 yr. - 24 hr. rainfall (NOAA Atlas 2)

Distance to Nearest Downslope Surface Water

2000 ft.

Physical State of Waste

Liquid (Dr. Eric Halfhill, USDA, Yakima)

* * *

3 CONTAINMENT

Containment None

Method(s) of waste or leachate containment evaluated:

Disposal into septic tank drain field

Method with highest score:

As above

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

DDT

Compound with highest score:

DDT

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Estimated at not more than 40 bbls - (conversation with Dr. Eric Halfhill)

Basis of estimating and/or computing waste quantity:

Conversation with Dr. Eric Halfhill - 7/30/82

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Irrigation

Is there tidal influence?

no

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

none

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

none

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

none

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

none for drinking water

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

480 acres S4 00699A Water right NE¼ of SE¼ Sec. 35
18 acres S4 00511A Water right SE¼ of SE¼ Sec. 36

Total population served:

=750 people

Name/description of nearest of above water bodies:

Wide Hollow Creek

Distance to above-cited intakes, measured in stream miles.

=8000 ft.

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

None

Date and location of detection of contaminants

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Facility name: U.S. Dept. of Agriculture Experimental Lab.

Location: Yakima, WA., 3706 West Nob Hill Blvd., 98902

EPA Region: 10

Person(s) in charge of the facility: Dr. Berdett, U.S.D.A., Director

Name of Reviewer: H. Aldis Date: 7/30/82

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Agriculture Experimental Laboratory handling small quantities of all sorts of pesticides and disposing of them by flushing into a septic tank drain field.

Scores: S_M = (S_{gw} = 48.12 S_{sw} = 11.16 S_a =)

S_{FE} = 0

S_{DC} = 0

28.55%

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0	45	1		45	3.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2]						
[2] Route Characteristics						3.2
Depth to Aquifer of Concern	0 1 2 (3)		2	6	6	
Net Precipitation	0 (1) 2 3		1	1	3	
Permeability of the Unsaturated Zone	0 (1) 2 3		1	1	3	
Physical State	0 1 2 (3)		1	3	3	
Total Route Characteristics Score				11	15	
[3] Containment	0 1 2 (3)		1	3	3	3.3
[4] Waste Characteristics						3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)		1	18	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8		1	1	8	
Total Waste Characteristics Score				19	26	
[5] Targets						3.5
Ground Water Use	0 1 2 (3)		3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 (35) 40		1	35	40	
Total Targets Score				44	49	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]				27588	57,330	
[7] Divide line [6] by 57,330 and multiply by 100			S_{gw} = 48.12			

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1		45	4.1
If observed release is given a value of 45, proceed to line [4]. If observed release is given a value of 0, proceed to line [2].					
[2] Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	(0) 1 2 3	1	0	3	
Distance to Nearest Surface Water	0 1 (2) 3	2	4	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			7	15	
[3] Containment	0 1 2 3	1	3	3	4.3
[4] Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
[5] Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 / (12) 16 18 20 / 24 30 32 35 40	1	12	40	
Total Targets Score			18	55	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			7182	64,350	
[7] Divide line [6] by 64,350 and multiply by 100			S_{sw} = 11.16		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a = 0			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	48.12	2315.53
Surface Water Route Score (S_{sw})	11.16	124.55
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2440.08
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		49.40
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		28.55

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Containment	1 3	1		3	7.1
[2] Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
[3] Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
[4] Multiply [1] x [2] x [3]				1,440	
[5] Divide line [4] by 1,440 and multiply by 100		S_{FE} =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1		45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	(0) 1 2 3	1		3	8.2
3 Containment	0 15	1		15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0				

FIGURE 12
DIRECT CONTACT WORK SHEET

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

X

ed by Hq)

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (*Section II*). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System, Hazardous Waste Enforcement Task Force (*EN-335*), 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME	B. STREET (*or other identifier*)		
Yakima Agricultral Res. Lab. USDA	3706 W. Nob Hill Blvd		
C. CITY	**D. STATE**	**E. ZIP CODE**	**F. COUNTY NAME**
Yakima	WA	98902	Yakima

G. SITE OPERATOR INFORMATION

1. NAME	2. TELEPHONE NUMBER		
United States Dept. of Agriculture	(509) 575-5877		
3. STREET	**4. CITY**	**5. STATE**	**6. ZIP CODE**
3706 W. Nob Hill Blvd.	Yakima	WA	98902

H. REALTY OWNER INFORMATION (*if different from operator of site*)

1. NAME	2. TELEPHONE NUMBER		
Harold & Leonard Christenson			
3. CITY	**4. STATE**	**5. ZIP CODE**	
Yakima	WA	98902	

I. SITE DESCRIPTION

Pesticide storage-formulation-mixing bldg. wastes flushed into a septic tank

J. TYPE OF OWNERSHIP

☒ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☐ 5. PRIVATE

II. TENTATIVE DISPOSITION (*complete this section last*)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (*mo., day, & yr.*)	B. APPARENT SERIOUSNESS OF PROBLEM
	☐ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME	2. TELEPHONE NUMBER	3. DATE (*mo., day, & yr.*)
Ecology and Environment, Inc.	(206) 624-9537	6-29-82

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME	2. TITLE	
Peter C. Evers	Field Technician	
3. ORGANIZATION		**4. TELEPHONE NO. (area code & no.)**
Ecology and Environment, Seattle, WA		(206) 624-9537

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Jacqueline W. Betz	Ecology and Environment, Inc.	(206) 624-9537
Dennis Bowhay	Washington State Dept. of Ecology	(509) 575-2490

C. SITE REPRESENTATIVES INTERVIEWED (*corporate officials, workers, residents*)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
Ron Sell	unk	3706 W. Nob Hill Blvd.

III. INSPECTION INFORMATION (continued)

D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE	3. ADDRESS	4. WASTE TYPE GENERATED
USDA-Yakima Ag. Res.	(509) 575-5877	3706 W. Nob Hill Blvd.	Pesticides

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
USDA-Yakima Ag. Res.	(509) 575-5877	3706 W. Nob Hill Blvd.	Pesticides

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
6-23-82	1600 hrs	[X] 1. PERMISSION [ ] 2. WARRANT

J. WEATHER (describe)
warm, sunny, 85°

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify)			

B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS
HNU	near septic tank and drainfield	indication above background

Continue On Page 3

Continued From Page 2

IV. SAMPLING INFORMATION (continued)

C. PHOTOS

1. TYPE OF PHOTOS: [X] a. GROUND [ ] b. AERIAL

2. PHOTOS IN CUSTODY OF: EPA Region X, Seattle, Ecology and Environment, Sea.

D. SITE MAPPED?

[X] YES. SPECIFY LOCATION OF MAPS: Yakima Agricultural Resource Laboratory

E. COORDINATES

1. LATITUDE (deg.-min.-sec.)	2. LONGITUDE (deg.-min.-sec.)
46°36'57"	120°33'37"

V. SITE INFORMATION

A. SITE STATUS

[X] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)

[ ] 2. INACTIVE (Those sites which no longer receive wastes.)

[ ] 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

[ ] 1. NO [X] 2. YES (specify generator's four-digit SIC Code): 2870

C. AREA OF SITE (in acres)

± 5 acres

D. ARE THERE BUILDINGS ON THE SITE?

[ ] 1. NO [X] 2. YES (specify): see attached site maps

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK	X	4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY	X	8. OTHER (specify): septic tank and drainfield
					9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

[ ] 1. STORAGE [ ] 2. INCINERATION [ ] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL

[X] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [ ] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

[X] 1. LIQUID [ ] 2. SOLID [ ] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS

[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE

[X] 5. TOXIC [ ] 6. REACTIVE [ ] 7. INERT [ ] 8. FLAMMABLE

[ ] 9. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

NO

Continue On Reverse

VII. WASTE RELATED INFORMATION *(continued)*

2. Estimate the amount *(specify unit of measure)* of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT: unk	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY, PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER *(specify)*:	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER *(specify)*:	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			X (4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
(5) OTHER *(specify)*:			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER *(specify)*:
			(6) CYANIDE	(6) OTHER *(specify)*:	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER *(specify)*:		

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE *(place in descending order of hazard)*

1. SUBSTANCE	2. FORM *(mark 'X')*			3. TOXICITY *(mark 'X')*				4. CAS NUMBER	5. AMOUNT	6. UNIT
	a. SOLID	b. LIQ.	c. VAPOR	a. HIGH	b. MED.	c. LOW	d. NONE			
insecticides		x						---	unk	---

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

X A. HUMAN HEALTH HAZARDS

Shallow domestic wells downgradient could be contaminated with insecticides.

☐ B. NON-WORKER INJURY/EXPOSURE

none

☐ C. WORKER INJURY/EXPOSURE

none

☒ D. CONTAMINATION OF WATER SUPPLY

Possible. Shallow domestic wells downgradient.

☒ E. CONTAMINATION OF FOOD CHAIN

Unknown

☒ F. CONTAMINATION OF GROUND WATER

Possible. Sands and gravels (highly permeable) overlay groundwater.

☐ G. CONTAMINATION OF SURFACE WATER

none

Continue On Reverse

Continued From Front

VIII. HAZARD DESCRIPTION (continued)

☐ H. DAMAGE TO FLORA/FAUNA

none

☐ I. FISH KILL

none

☒ J. CONTAMINATION OF AIR

noticeable odor

☒ K. NOTICEABLE ODORS

noticeable chemical odor

☒ L. CONTAMINATION OF SOIL

septic tank drainfield allows insecticides to permeate soil

☐ M. PROPERTY DAMAGE

none known

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Continued From Page 6

VIII. HAZARD DESCRIPTION *(continued)*

☐ N. FIRE OR EXPLOSION

none

☒ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

small visible spills in area of septic tank

☐ P. SEWER, STORM DRAIN PROBLEMS

none

☐ Q. EROSION PROBLEMS

none

☒ R. INADEQUATE SECURITY

Security appears adequate.

☒ S. INCOMPATIBLE WASTES

Unknown because "blind" chemicals are tested and disposed of in septic tank.

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

none

☐ U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	>10,000	>10,000	>100	1 mile
2. IN COMMERCIAL OR INDUSTRIAL AREAS	>10,000	>10,000	>100	1 mile
3. IN PUBLICLY TRAVELLED AREAS	>20,000	>10,000	>100	1 mile
4. PUBLIC USE AREAS (parks, schools, etc.)	>10,000	>10,000	>20	1 mile

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
<20 ft.	southeast	domestic, irrigation
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
1-10 gpm	unknown	all directions

G. TYPE OF DRINKING WATER SUPPLY

☐ 1. NON-COMMUNITY < 15 CONNECTIONS

☒ 2. COMMUNITY (specify town) > 15 CONNECTIONS Yakima, Wa. from Naches River

☒ 3. SURFACE WATER

☒ 4. WELL

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Continued From Page 8

X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')

I. RECEIVING WATER

1. NAME: none

☐ 2. SEWERS ☐ 3. STREAMS/RIVERS ☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify):

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

none

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☒ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

	A. OVERBURDEN		B. BEDROCK (specify below)		C. OTHER (specify below)
X	1. SAND		(irrelevant, does not affect aquifer).		
	2. CLAY				
	3. GRAVEL				

XIII. SOIL PERMEABILITY

☐ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)

☒ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☒ 1. YES ☐ 2. NO 3. COMMENTS:

H. DISCHARGE AREA

☐ 1. YES ☒ 2. NO 3. COMMENTS:

I. SLOPE

1. ESTIMATE % OF SLOPE: flat

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.:

J. OTHER GEOLOGICAL DATA: Silt loam for 20 ft w. some coarse sand and gravel. (H. Aldis 8/24/82 borehole data)

Continued From Front

XIV. PERMIT INFORMATION

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X') 1. YES	2. NO	3. UNKNOWN

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

[X] NONE [ ] YES (summarize in this space)

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition *(Section II)* information on the first page of this form.